

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1. (Currently Amended) An inline phase shifter comprising:
a waveguide having at least one first and second electrically conducting
surface surfaces and a waveguide path; and
at least one first and second electromechanical means for changing a
physical dimension of the waveguide path to phase shift a signal which travels along
the waveguide path, wherein each of the at least one first and second
electromechanical means comprises either a piezoelectric element ~~with a moveable~~
~~shutter~~ or an electrostatically actuated shutter, and wherein the ~~shutter is~~ shutters
are electrically connected to the respective electrically conducting surface for
providing phase shift and impedance matching, and wherein the first
electromechanical means has a first shutter that can move toward the second
surface and the second electromechanical means has a second shutter that can
move toward the first surface.

2. (Currently Amended) The inline phase shifter according to claim 1,
wherein the at least one first and second electromechanical means is a set of first
and second electromechanical devices arranged at one or more points along the
waveguide path.

3. (Currently Amended) The inline phase shifter according to claim 1, comprising: wherein said at least first and second electrically conducting surfaces comprises

a first surface of the waveguide parallel to a second surface of the waveguide, and wherein each of the at least one first and second electromechanical means includes a first electromechanical means positioned adjacent to the first surface, and

a second electromechanical means positioned adjacent to the second surface.

4. (Currently Amended) An inline phase shifter comprising:

a waveguide having at least one first and second electrically conducting surface surfaces and a waveguide path, [[a]] the first surface of the waveguide being parallel to [[a]] the second surface of the waveguide; and

at least one electromechanical means for changing a physical dimension of the waveguide path to phase shift a signal which travels along the waveguide path, wherein the at least one electromechanical means comprises either a piezoelectric element with a moveable shutter or an electrostatically actuated shutter, wherein the at least one electromechanical means includes a first electromechanical means positioned adjacent to the first surface, and a second electromechanical means positioned adjacent to the second surface, and wherein the first electro-mechanical means has a first shutter that can move toward the second surface and the second electro-mechanical means has a second shutter that can move toward the first surface.

5. (Previously Presented) The inline phase shifter according to claim 4, wherein there is an opening normal to the waveguide path between the first and second electromechanical means.

6. (Previously Presented) The inline phase shifter according to claim 5, wherein the first and second electromechanical means are positioned within the waveguide.

7. (Original) A radar system having an inline phase shifter according to claim 1, wherein the inline phase shifter is connected to a radar transceiver for phase shifting one of transmitted and received signals.

8. (Currently Amended) A method for phase shifting a signal comprising: changing physical dimensions of a waveguide path by actuating an first and second electromechanical devices; and
inputting a signal along the waveguide path to output a phase shifted signal, wherein each of the first and second electromechanical devices comprises either a piezoelectric element with a moveable shutter or an electrostatically actuated shutter, and wherein the shutter is shutters are electrically connected to [[a]] the respective conducting surface of a waveguide having first and second surfaces which define the waveguide path for providing phase shift and impedance matching, and wherein the first electromechanical device has a first shutter that can move

toward the second surface and the second electromechanical device has a second shutter that can move toward the first surface.

9. (Currently Amended) The method for phase shifting a signal according to claim 8, comprising:

 sending an actuation signal to at least one of the electromechanical devices positioned adjacent to [[a]] the waveguide containing the waveguide path.

10. (Currently Presented) An inline phase shifter comprising:
 a waveguide having at least first and second conducting surfaces along a waveguide path of the waveguide; and
 a plurality of electromechanical devices positioned serially along the waveguide path sufficiently adjacent to the waveguide path to change a physical dimension of the waveguide path upon actuation of at least one of the plurality of electromechanical devices, wherein each of the plurality of electromechanical devices comprises either a piezoelectric element or an electrostatically actuated shutter, and wherein the electromechanical devices are electrically connected to the respective conducting surface of the waveguide for providing phase shift and impedance matching, and wherein at least one of the plurality of electromechanical devices has a first shutter that can move toward the second surface and at least another of the plurality of electromechanical devices has a second shutter that can move toward the first surface.

11. (Previously Presented) An inline phase shifter, comprising:

a waveguide having a waveguide path; and
a plurality of electromechanical devices positioned serially along the waveguide path sufficiently adjacent to the waveguide path to change a physical dimension of the waveguide path upon actuation of at least one of the plurality of electromechanical devices, wherein the plurality of electro-mechanical devices is positioned entirely within the waveguide.

12. (Currently Amended) An inline phase shifter comprising:
a waveguide having a waveguide path; and
at least one micro-electromechanical device positioned sufficiently adjacent to the waveguide path ~~to change a for~~ physical dimension of the waveguide path upon actuation of the at least one micro-electromechanical device in the waveguide path, wherein the at least one micro-electromechanical device comprises either a piezoelectric element with a moveable shutter or an electrostatically actuated shutter, and wherein the shutter is electrically connected to the waveguide for providing phase shift and impedance matching, wherein said at least one micro-electromechanical device is positioned entirely within the waveguide.

13. (Previously Presented) The inline phase shifter according to claim 12, wherein said waveguide comprises a first surface and a second surface parallel to the waveguide path and includes a first one of said at least one micro-electromechanical device positioned adjacent to the first surface and a second one of said at least one micro-electromechanical device positioned adjacent to the second surface.

14. (Previously Presented) The inline phase shifter according to claim 13, wherein the first and second micro-electromechanical devices are a set of devices arranged at one or more points along the waveguide path.

15. (Currently Amended) An inline phase shifter comprising:
a waveguide having a waveguide path; and
at least one micro-electromechanical device positioned sufficiently adjacent to the waveguide path to change a physical dimension of the waveguide path upon actuation of the at least one micro-electromechanical device, wherein the at least one micro-electromechanical device comprises either a piezoelectric element with a moveable shutter or an electrostatically actuated shutter, wherein said waveguide comprises a first surface and a second surface parallel to the waveguide path and includes a first one of said at least one micro-electromechanical device positioned adjacent to the first surface and a second one of said at least one micro-electromechanical device positioned adjacent to the second surface, and wherein the first micro-electromechanical device has a first shutter that can unroll toward the second surface and the second micro-electromechanical device has a second shutter that can unroll toward the first surface.

16. (Original) The inline phase shifter according to claim 15, wherein there is an opening normal to the waveguide path between the first and second shutters.

17. (Previously Presented) The inline phase shifter according to claim 13, wherein the first and second micro-electromechanical devices are positioned within the waveguide.

18. (Currently Amended) An inline phase shifter comprising:
a waveguide having a waveguide path; and
at least one micro-electromechanical device positioned sufficiently adjacent to the waveguide path to change a physical dimension of the waveguide path upon actuation of the at least one micro-electromechanical device, wherein the at least one micro-electromechanical device comprises either a piezoelectric element with a moveable shutter or an electrostatically actuated shutter, and wherein said waveguide comprises:
a first surface and a second surface parallel to the waveguide path;
a first array of said at least one micro-electromechanical devices positioned adjacent to the first surface; and
a second array of said at least one micro-electromechanical devices positioned adjacent to the second surface, wherein devices of the first array have a respective shutter that can move toward the second surface, and devices of the second array have a respective shutter that can move toward the first surface.

19. (Previously Presented) The inline phase shifter according to claim 18, wherein there is an opening normal to the waveguide path between the first and second arrays of micro-electromechanical devices.

20. (Currently Amended) The inline phase shifter according to claim 19, wherein the first and second arrays are a respective set of said at least one microelectromechanical devices arranged at one or more points along the waveguide path.

21. (Canceled)

22. (Currently Amended) The inline phase shifter of claim 1, wherein said physical dimension of the waveguide path is changed by actuating the at least one first and second electro-mechanical means.

23. (Previously Presented) An inline phase shifter comprising:
a waveguide having at least one electrically conducting surface and a waveguide path; and

at least one electromechanical means for changing a physical dimension of the waveguide path to phase shift a signal which travels along the waveguide path, wherein the at least one electromechanical means comprises either a piezoelectric element with a moveable shutter or an electrostatically actuated shutter, wherein said at least one electromechanical means is positioned entirely within the waveguide.

24. (Canceled)

25. (Currently Amended) The inline phase shifter according to claim 1, wherein each of said at least one first and second electromechanical means comprises a respective micro-electromechanical device.

26. (Canceled)

27. (Previously Presented) The inline phase shifter according to claim 10, wherein a physical dimension of the waveguide path is changed by actuating at least one of the plurality of electromechanical devices.

28. (Previously Presented) An inline phase shifter comprising:
a waveguide having conducting surfaces along a waveguide path of the waveguide; and
a plurality of electromechanical devices positioned serially along the waveguide path sufficiently adjacent to the waveguide path to change a physical dimension of the waveguide path upon actuation of at least one of the plurality of electromechanical devices, wherein each of the plurality of electromechanical devices comprises either a piezoelectric element or an electrostatically actuated shutter, wherein each of said plurality of electromechanical devices is positioned entirely within the waveguide.

29. (Canceled)

30. (Previously Presented) The inline phase shifter according to claim 10, wherein each of said plurality of electromechanical devices comprises a respective micro-electromechanical device.

31. - 34. (Canceled)